UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/048,933	03/26/98	KLEIN	MET-97-01-01A

```
022835                          WM21/0511
PARK, VAUGHAN & FLEMING LLP
508 SECOND STREET
SUITE 201
DAVIS CA 95616
```

EXAMINER
LO, L

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 05/11/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

	Application No.		Applicant(s)
Office Action Summary	09/048,933		KLEIN, DEAN A.
	Examiner		**Art Unit**
	Linus H Lo		2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-20* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)   ~~Substitute~~ Pto-948   18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
16) ☒ Notice of Draftsperson's Patent Drawing Review ~~(PTO-948)~~   19) ☐ Notice of Informal Patent Application (PTO-152)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   20) ☐ Other: .

DETAILED ACTION

Specification

1.   The disclosure is objected to because of the following informalities:

It is noted that a related co-pending non-provisional application with the title "Apparatus

for Assisting Video Compression in a Computer System" is listed in the content of specification

on page 1, lines 16-18, however the application number and filing date was not provided.

Thus, appropriate correction is required.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1-3, 5-7, and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by

Dea '208.

In consider claim 1, Dea discloses a remote video processing system including

compression/decompression accelerator.   Dea discloses the following claimed subject matter,

note 1) the claimed method for compressing video data in a computer system is met by the

description at column 4, lines 36-41 and lines 17-19, and FIG. 1, where of the described

compression/decompression accelerator 120 performs the compression method;

2)   the claimed step of receiving a stream of data from a current video frame in the

computer system is met by description at column 6, lines 42-44 and FIG. 2;

3)   the claimed step of computing a difference frame from the current video frame

and a previous video frame as the current video frame streams into the computer system is met

by the description of the subtraction function of frame difference block 220 (column 6, lines

36-44, and column 5, lines 42-47, and FIG. 2); and

4)   the claimed step of storing difference frame in a memory in the computer system

is met by the description of buffer 248 at column 9, line 60 - column 10, line 3, and FIG. 2.

In consider claim 2, the claimed storing the current video frame in the memory in the

computer system is met by the current frame memory 204 (column 6, lines 42-44, and FIG.

2.)

In consider claim 3, the claimed wherein the current video frame is written over a

previous video frame in the memory is met by the current frame memory 204 (column 6, lines

42-44, and FIG. 2.), whereas the current frame memory 204 receives video frame sequentially

that the area stores the relatively previous video frame is subsequently replace by the newly

received current video frame.

In consider claim 5, the claimed step of computing a difference between a block of

data from the current video frame and a block of data from the previous video frame is met

description at column 10 , lines 53-56 and column 5, lines 42-47, and FIG. 3A, where the

excerpt from column 10 described the utilizing of the block of data from the current and

previous video frame.

In consider claim 6, the claimed wherein storing the difference frame in memory

includes storing the differences frame in the memory in the memory using block transfer is

met by the is met the description at column 10 , lines 53 - column 11, lines7 and column 5,

lines 42-47, and FIG. 3A, where the excerpt from column 10 and 11 described the utilizing of

the block of data from the current and previous video frame and subsequently recognized that

data stored in buffer is in the from of block.

In consider claim 7, the claimed using the difference frame to produce compressed

video data is met by the description of FIG. 3A and column 10, line 53 - column 11, line 7,

whereof FIG. 3A depicted the frame difference block 220 provides a difference frame and

subsequently after the variable length encoding block , the compressed video bitstream 338 is

output.

In consider claim 11, the claimed wherein computing the difference fame includes

computing the difference frame in a core logic chip within the computer system is met by the

compress/decompression accelerator 120 that includes the function frame difference block 220 (

column 6, lines 36-44, and column 5, lines 42-47, and FIG. 2)

In consider claim 12, the claimed wherein computing the difference frame includes

computing the difference frame in circuitry outside of a central processing unit in the

computer system is met by the processor 112 and the compression/decompression accelerator

120 (FIG. 2).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 4, 9, 13-17, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dea '208 in view of Abramatic et al. '383.

In consider claim 4, Dea discloses the claimed invention except for the claimed step of computing the difference frame includes computing an exclusive-OR between the current video frame and the previous video frame.

Nonetheless, Dea teaches that a step of computing *the difference frame* between the current video frame and the previous video frame as discuss above in claim 1.   Furthermore, Abramatic et al. teach that a form of compression consists in detecting variations (difference) between on image and the next as described at column 2, lines 53-56.   Abramatic et al. discloses the claimed step of computing an exclusive-OR between the current video frame and the previous video frame as met by the description at column 6, lines 52-58, whereof the described previous image at the input 55 and the arrival of new points at the input 57 which are respectively considered as the previous and current video frame.

Since Abramatic et al. teach that XOR function for the difference calculation 56 which has the advantage of providing a less complicated means for the difference calculation techniques as elucidate at column 7, lines 32-35.

Therefore it would have been obvious to one have ordinary skilled in the art at the time the invention was made to recognize the advantage and the claimed the claimed step of

computing the difference frame includes computing an exclusive-OR between the current video

frame and the previous video frame as taught by Abramatic et al. in the system of Dea.

In consider claim 9, Dea discloses the claimed invention except for the claimed using the

video data in compressed form in a video teleconferencing system.

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to recognize the claimed using the video data in compressed form in a video

teleconferencing system in the system of Dea, since examiner takes Official Notices of the

commonly well known usage of the compressed video data form in a teleconference system ,

whereof the compressed video data form is recognized to provide the benefit of bandwidth

conservation on a communication system.

In consider claim 13, Dea discloses a remote video processing system including

compression/decompression accelerator.   Dea discloses the following claimed subject matter,

note

1)   the claimed method for compressing video data in a computer system is met by

the description at column 4, lines 36-41 and lines 17-19, and FIG. 1, where of the described

compression/decompression accelerator 120 performs the compression method;

2)   the claimed step of receiving a stream of data from a current video frame in the

computer system is met by description at column 6, lines 42-44 and FIG. 2;

3)   the claimed step of computing a difference frame from the current video frame

and a previous video frame as the current video frame streams into the computer system is met

by the description   of the subtraction function of frame difference block 220 (column 6, lines

36-44, and column 5, lines 42-47, and FIG. 2);

4)   the claimed step of storing difference frame in a memory in the computer system

is met by the description of buffer 248 at column 9, line 60 - column 10, line 3, and FIG. 2;

5)   the claimed storing the current video frame in the memory in the computer

system is met by the current frame memory 204 (column 6, lines 42-44, and FIG. 2);

6)   the claimed using the difference frame to produce compressed video data is

met by the description of FIG. 3A and column 10, line 53 - column 11, line 7, whereof FIG.

3A depicted the frame difference block 220   provides a difference frame and subsequently after

the variable length encoding block , the compressed video bitstream 338   is output.

However, Dea does not disclose the claimed step of computing the difference frame

includes computing an exclusive-OR between the current video frame and the previous video

frame.

Nonetheless, Dea teaches that a step of computing *the difference frame* between the

current video frame and the previous video frame as discuss above in claim 1.   Furthermore,

Abramatic et al. teach that a form of compression consists in detecting variations (difference)

between on image and   the next as described at column 2, lines 53-56.   Abramatic et al.

discloses the claimed step of computing an exclusive-OR between the current video frame and

the previous video frame as met by the description at column 6, lines 52-58, whereof the

described previous image at the input 55 and the arrival of new points at the input 57   which

are respectively considered as the previous and current video frame.

Since Abramatic et al. teach that XOR function for the difference calculation 56 which has the advantage of providing a less complicated means for the difference calculation techniques as elucidate at column 7, lines 32-35.

Therefore it would have been obvious to one have ordinary skilled in the art at the time the invention was made to recognize the advantage and the claimed step of computing the difference frame includes computing an exclusive-OR between the current video frame and the previous video frame as taught by Abramatic et al. in the system of Dea.

In consider claim 14, the claimed wherein the current video frame is written over a previous video frame in the memory is met by the current frame memory 204 of Dea (column 6, lines 42-44, and FIG. 2.), whereas the current frame memory 204 receives video frame sequentially that the area stores the relatively previous video frame is subsequently replace by the newly received current video frame.

In consider claim 15, the claimed step of computing a difference between a block of data from the current video frame and a block of data from the previous video frame is met description of Dea at column 10, lines 53-56 and column 5, lines 42-47, and FIG. 3A, where the excerpt from column 10 described the utilizing of the block of data from the current and previous video frame.

In consider claim 16, the claimed wherein storing the difference frame in memory includes storing the differences frame in the memory in the memory using block transfer is met by the is met the description of Dea at column 10, lines 53 - column 11, lines7 and column 5, lines 42-47, and FIG. 3A, where the excerpt from column 10 and 11 described the

utilizing of the block of data from the current and previous video frame and subsequently

recognized that data stored in buffer is in the from of block

In consider claim 17, Dea discloses the claimed invention except for the claimed using

the video data in compressed form in a video teleconferencing system.

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to recognize the claimed using the video data in compressed form in a video

teleconferencing system in the system of Dea, since examiner takes Official Notices of the

commonly well known usage of the compressed video data form in a teleconference system ,

whereof the compressed video data form is recognized to provide the benefit of bandwidth

conservation on a communication system.

In consider claim 19, the system of Dea and Abramatic et al. disclose the claimed

invention except for the claimed storing instruction and data for the computer system in the

memory.

Nevertheless, Dea teaches *a step of storing* data for the computer system in the memory

as the description of DRAM at column 4, lines 52-63, and furthermore Dea teaches that the

video processing system 100 (computer system) utilizes executable program instructions

(column 4, lines 36-51). Since examiner takes Official Notice of the commonly known in the

art that processing system (computer system) stores instruction for the computer system in the

memory in order for the system to retrieve and executed the programmed instruction would be

within the level of ordinary skill in the art . Therefore it would have been obvious to one

having ordinary skill in the art at the time the invention was made to recognize the claimed step

of storing instruction and data for the computer system in the memory in the system of Dea and

Abramatic et al..

In consider claim 20, the claimed wherein computing the difference fame includes

computing the difference frame in a core logic chip within the computer system is met by the

compress/decompression accelerator 120 of Dea that includes the function frame difference

block 220 (column 6, lines 36-44, and column 5, lines 42-47, and FIG. 2.)

6. Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dea '208 in

view of Hardiman ' 223.

In consider claim 8, Dea disclose the claimed invention except for the claimed step of

performing a color space conversion on the video data.

Hardiman discloses an invention relates to compression coding of a video program.

Hardiman disclose the claimed performing a color space conversion on the video data is met by

the subsampler and color space converter 80 (column 3, lines 47-57, column 6, lines 55-64, and

FIG. 2). Since it was well known in the art that the color space conversion on video

would recognize the benefit of properly converting the video information from a computer

processed information into a displayable signal for image displaying (column 3, lines 47-57).

Therefore it would have been obvious to one having ordinary skill in the art at the time

the invention was made to recognize the advantage of performing a color space conversion on

the video data and further realize the claimed step of performing a color space conversion on the video data as taught by Hardiman in the system of Dea.

7.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dea '208.

In consider claim 10, Dea discloses the claimed invention except for the claimed storing instruction and data for the computer system in the memory.

Nevertheless, Dea teaches *a step of storing* data for the computer system in the memory as the description of DRAM at column 4, lines 52-63, and furthermore Dea teaches that the video processing system 100 (computer system) utilizes executable program instructions (column 4, lines 36-51). Since examiner takes Official Notice of the commonly known in the art that processing system (computer system) stores instruction for the computer system in the memory in order for the system to retrieve and executed the programmed instruction would be within the level of ordinary skill in the art . Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to recognize the claimed step of storing instruction and data for the computer system in the memory in the system of Dea.

8.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dea ' 208 and Abramatic et al. '383 as applied to claim13 above, and further in view of Hardiman '223

In consider claim 18, the system Dea and Abramatic et al. disclose the claimed invention except for the claimed step of performing a color space conversion on the video data.

Hardiman discloses an invention relates to compression coding of a video program. Hardiman disclose the claimed performing a color space conversion on the video data is met by

the subsampler and color space converter 80 (column 3, lines 47-57, column 6, lines 55-64, and

FIG. 2). Since it was well known in the art that the color space conversion on video would

recognize the benefit of properly converting the video information from a computer processed

information into a displayable signal for image displaying (column 3, lines 47-57).

Therefore it would have been obvious to one having ordinary skill in the art at the time

the invention was made to recognize the advantage of performing a color space conversion on

the video data and further realize the claimed step of performing a color space conversion on

the video data as taught by Hardiman in the system of Dea and Abramatic et al..

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Yan discloses a system and method for filtering video signals.

Nakaya et al. disclose a system and method for performing video coding/decoding

using motion compensation.

Jung discloses an apparatus for detecting motion vectors using moving object patterns.

Ersoz et al. disclose a displaying an interlaced video signal with a noninterlaced video

signal.

Yoshida discloses an image processing apparatus and method .

Lee discloses an apparatus for detecting a foreground region for use in a low bit-rate

image signal encoder.

Sahraray discloses method for detecting camera -motion induced scene changes.

Pirson et al. disclose a method for selecting motion vectors and image processing

device implementing the said method.

Wu et al. disclose a system and method for enforcing interlaced field synchronization in

the presence of broken alternation in an MPEG video data stream.

Kopet et al. disclose a motion estimation coprocessor.

Werner discloses an integrated MPEG decoder and image resizer for SLM-based digital

display system.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-6306 or 308-6396, (for formal communications intended for

entry) and   (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II,

2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the

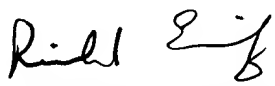examiner should be directed to Linus H. Lo whose telephone number is (703) 305-4039. The

examiner can normally be reached on Monday-Thursday from 8:30 am to 6:00 pm. The

examiner can also be reached on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Reinhard Eisenzopf can be reached on (703) 305-4711. The fax phone number for

this Group is (703) 308-5359.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Group receptionist whose telephone number is (703) 305-3900.

lhl   LL

May 9, 2001

REINHARD J. EISENZOPF   5-10-01
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600